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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,933	10/21/2003	Hisayoshi Daichou	Q78075	3174

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SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
NEGRON, ISMAEL	

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/688,933	DAICHOU ET AL.	
	Examiner	Art Unit	
	Ismael Negron	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/30/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on March 29, 2006 has been entered. Claim 1 has been amended. Claims 2 and 3 have been cancelled. Claims 4-11 have been added. Claims 1 and 4-11 are still pending in this application, with claims 1, 6 and 9 being independent.

DETAILED ACTION

Title

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: **Bulk Molding Compound for** Lamp Reflector.

Abstract

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves

modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because it refers to purported merits or speculative applications of the invention, and uses phrases which can be implied. Correction is required. See MPEP § 608.01(b).

4. The Examiner respectfully suggests amending the abstract as follows:

~~The invention provides a lamp reflector having a substrate prepared by injection molding a BMC~~ **A blow molding compound (BMC)** ~~comprising~~ **having** a matrix resin mainly ~~comprising~~ **including** an unsaturated polyester resin and glass fiber as a reinforcing inorganic filler,

the BMC further ~~comprising~~ **having** hollow glass spheres in an amount of 10 to 40% by volume based on the BMC as an additional inorganic filler~~, by which the substrate prepared from a BMC has a reduced weight and yet retains the main characteristics expected of a BMC injection molded part~~.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over BURNELL-JONES (U.S. Pat. 6,599,444) in view of ANDERSON et al. (U.S. Pat. 6,030,673).

6. BURNELL-JONES discloses bulk molding compound (BMC) having:

- **a matrix resin (as recited in Claim 1)**, column 8, lines 11-17;
- **the matrix resin mainly including an unsaturated polyester resin and glass fiber as an inorganic filler (as recited in Claim 1)**, column 8, lines 18-26;

- **the BMC forming a substrate by injection molding (as recite din Claim 1)**, column 38, line 14;
- **the substrate being part of a reflector (as recited in Claim 1)**, column 38, line 42;
- **hollow glass spheres as an additional inorganic filler (as recited in Claim 1)**, column 18, lines 45-50; and
- **the hollow glass spheres having an average diameter of less than 44 µm (as recited in Claim 1)**, column 18, lines 29-34.

7. BURNELL-JONES discloses all the limitations of the claims, except:

- the hollow glass spheres forming 10 to 40% by volume of the bulk molding compound (as recited in Claim 1);
- the total inorganic filler content having a volume ratio of 1.0 to 2.5 to the matrix resin (as recited in Claim 1);
- the hollow glass spheres having an average diameter of 15 to 45 µm (as recited in Claim 1);
- the hollow glass spheres having a pressure strength of at least 40 MPa (as recited in Claim 4); and
- the hollow glass spheres being made of a chemically stable insoluble glass (as recited in Claim 5).

8. ANDERSON et al. discloses a BMC for injection molding, such BMC having:

- **hollow glass spheres forming 25 to 55% by volume of the bulk molding compound**, column 36, lines 31-37;
- **glass fiber content forming 5 to 20% by volume of the bulk molding compound**, column 38, lines 16-20;
- **the properties of the BMC being controlled by the nature and proportions of the aggregate (e.g. hollow glass spheres and glass fibers)**, column 7, lines 55-58.

9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to formed the BMC of BURNELL-JONES having 10 to 40% by volume of unsaturated polyester resin, glass fiber and hollow glass balls (as recited in Claim 1), or the total inorganic filler content having a volume ratio of 1.0 to 2.5 to the matrix resin (as recited in Claim 1) as disclosed by ANDERSON et al., to reduce the cost of manufacturing the reflector of BURNELL-JONES while at the same time increasing its strength and its ability to withstand high temperatures, as per the teachings of ANDERSON et al.

10. Regarding the hollow glass spheres having an average diameter of 15 to 45 μm (as recited in Claim 1), it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use hollow glass spheres having a diameter inside the claimed range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges

involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233. In this case, the specific range for the diameter of the hollow spheres of ANDERSON et al. would have flown naturally to one of ordinary skill as necessitated by the specific requirements of a particular application, as evidenced by both BURNELL-JONES and ANDERSON et al.

11. Regarding the hollow glass spheres having a pressure strength of at least 40 MPa (as recited in Claim 4) or being made of a chemically stable insoluble glass (as recited in Claim 5), it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use hollow balls with the claimed pressure strength and material, since it has been held by the courts that selection of a prior art material on the basis of its suitability for its intended purpose is within the level of ordinary skill. *In re Leshing*, 125 USPQ 416 (CCPA 1960) and *Sinclair & Carroll Co. v. Interchemical Corp.*, 65 USPQ 297 (1945). In this case, as previously stated, selecting a specific type of hollow spheres of ANDERSON et al. would have flown naturally to one of ordinary skill as necessitated by the specific requirements of a particular application, as evidenced by ANDERSON et al. In addition, the Examiner takes Official Notice of applicant's statement regarding hollow balls made of a chemically stable insoluble glass (as recited in Claim 5) being old and well known in the art (see page 8, lines 12-15 of the specification as filed).

12. Claims 6-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over SERIZAWA et al. (U.S. Pat. 6,00,816), in view of BURNELL-JONES (U.S. Pat. 6,599,444) and ANDERSON et al. (U.S. Pat. 6,030,673).

13. SERIZAWA et al. discloses headlamp having:

- **a lamp shell (as recited in claims 6 and 9)**, Figure 2, reference number 14;
- **a front lens (as recited in claims 6 and 9)**, Figure 2, reference number 12;
- **a light source (as recited in claims 6 and 9)**, Figure 2, reference number 18;
- **a reflector (as recited in claims 6 and 9)**, Figure 2, reference number 16;
- **the reflector including a substrate (as recited in claims 6 and 9)**, inherent;
- **the reflector having a reflective coating (as recited in claims 6 and 9)**, Figure 2, reference number 22;
- **the reflective coating being formed on an outer surface of the substrate (as recited in claims 6 and 9)**, as seen in Figure 2; and
- **the outer surface of the substrate facing the light source (as recited in claims 6 and 9)**, as seen in Figure 2.

14. SERIZAWA et al. discloses all the limitations of the claims, except:

- a matrix resin (as recited in claims 6 and 9);
- the matrix resin mainly including an unsaturated polyester resin and glass fiber as an inorganic filler (as recited in claims 6 and 9);
- the BMC forming a substrate by injection molding (as recited in claims 6 and 9);
- the hollow glass spheres forming 10 to 40% by volume of the bulk molding compound (as recited in claims 6 and 9);
- the total inorganic filler content having a volume ratio of 1.0 to 2.5 to the matrix resin (as recited in claims 6 and 9);
- the hollow glass spheres having an average diameter of 15 to 45 μm (as recited in claims 6 and 9);
- the hollow glass spheres having a pressure strength of at least 40 MPa (as recited in claims 7 and 10); and
- the hollow glass spheres being made of a chemically stable insoluble glass (as recited in claims 8 and 11);.

15. BURNELL-JONES discloses bulk molding compound (BMC) having:

- **a matrix resin (as recited in claims 6 and 9)**, column 8, lines 11-17;
- **the matrix resin mainly including an unsaturated polyester resin and glass fiber as an inorganic filler (as recited in claims 6 and 9)**, column 8, lines 18-26;

- **the BMC forming a substrate by injection molding (as recite din claims 6 and 9)**, column 38, line 14;
- **the substrate being part of a reflector (as recited in claims 6 and 9)**, column 38, line 42;
- **hollow glass spheres as an additional inorganic filler (as recited in claims 6 and 9)**, column 18, lines 45-50; and
- **the hollow glass spheres having an average diameter of less than 44 µm (as recited in claims 6 and 9)**, column 18, lines 29-34.

16. ANDERSON et al. discloses a BMC for injection molding, such BMC having:

- **hollow glass spheres forming 25 to 55% by volume of the bulk molding compound**, column 36, lines 31-37;
- **glass fiber content forming 5 to 20% by volume of the bulk molding compound**, column 38, lines 16-20;
- **the properties of the BMC being controlled by the nature and proportions of the aggregate (e.g. hollow glass spheres and glass fibers)**, column 7, lines 55-58.

17. It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use the BMC of BURNELL-JONES to form the reflector of SERIZAWA et al., to obtain a cheaper, stronger and easy to manufacture reflector, as per the teachings of BURNELL-JONES.

18. Regarding the specific proportions the BMC of BURNELL-JONES having 10 to 40% by volume of the unsaturated polyester resin, glass fiber and hollow glass balls (as recited in claims 6 and 9), or the total inorganic filler content having a volume ratio of 1.0 to 2.5 to the matrix resin (as recited in claims 6 and 9) as disclosed by ANDERSON et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to formed the BMC of BURNELL-Jones as claimed to reduce the cost of manufacturing the reflector of SERIZAWA et al. while at the same time increasing its strength and its ability to withstand high temperatures, as per the teachings of ANDERSON et al.

19. Regarding the hollow glass spheres having an average diameter of 15 to 45 μm (as recited in claims 6 and 9), it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use hollow glass spheres having a diameter inside the claimed range, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only ordinary skill in the art. *In re Aller*, 105 USPQ 233. In this case, the specific range for the diameter of the hollow spheres of ANDERSON et al. would have flown naturally to one of ordinary skill as necessitated by the specific requirements of a particular application, as evidenced by both BURNELL-JONES and ANDERSON et al.

20. Regarding the hollow glass spheres having a pressure strength of at least 40 MPa (as recited in claims 7 and 10) or being made of a chemically stable insoluble glass (as recited in claims 8 and 11), it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use hollow balls with the claimed pressure strength and material, since it has been held by the courts that selection of a prior art material on the basis of its suitability for its intended purpose is within the level of ordinary skill. *In re Leshing*, 125 USPQ 416 (CCPA 1960) and *Sinclair & Carroll Co. v. Interchemical Corp.*, 65 USPQ 297 (1945). In this case, as previously stated, selecting a specific type of hollow spheres of ANDERSON et al. would have flown naturally to one of ordinary skill as necessitated by the specific requirements of a particular application, as evidenced by ANDERSON et al. In addition, the Examiner takes Official Notice of applicant's statement regarding hollow balls made of a chemically stable insoluble glass (as recited in claims 8 and 11) being old and well known in the art (see page 8, lines 12-15 of the specification as filed).

Response to Arguments

21. Applicant's arguments filed March 29, 2006 have been fully considered but they are not persuasive.

22. Regarding the Examiner's rejection of Claim 1 under 35 U.S.C. 103(a) as being unpatentable over BURNELL-JONES (U.S. Pat. 6,599,444) in view of ANDERSON et al. (U.S. Pat. 6,030,673), the applicant argues that the cited combination of references

is improper as the hollow glass spheres of ANDERSON et al. are disclose as being used with starch-base binder materials, and not a polyester blend as disclosed by BURNELL-JONES. In addition, the applicant argues that ANDERSON et al. teaches away from using hollow glass spheres with polyester blends, since it specifically indicates that its composition is better that prior art compositions utilizing plastics. Further the applicant argues that the proposed combination fails to disclose, or even suggest, the BMC having a total inorganic filler content in a volume ratio of 1.0 to 2.5 to the matrix resin.

23. In response to applicant's argument that BURNELL-JONES and ANDERSON et al. are not combinable as they disclose hollow glass balls used with different substrates, the applicant is advised that the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

In this case, while it might be true that the substrates of BURNELL-JONES and ANDERSON et al. are different in nature, it is noted that the proposed combination is based on the teachings, presented by ANDERSON et al., of the proportions and quantities of inorganic fillers added to a substrate, and how such proportions and quantities affect the final manufacturing and physical properties of the BMC, not on the particular nature of the base material of the substrate.

Regarding applicant's arguments that ANDERSON et al. teaches away from using hollow glass spheres with polyester blends, the applicant is advised that Anderson et al. preference of a starch-based binder over a polyester blend does not constitute a "teaching away" statement, but merely stating a preference. As the applicant is surely aware non-preferred embodiments are still prior art. However, even if ANDERSON et al. was considered as teaching away from using hollow glass spheres with polyester blends, the rejection was based on the combination of BURNELL-JONES and ANDERSON et al., not on the teachings of ANDERSON et al. alone.

24. Regarding BURNELL-JONES and ANDERSON et al. failing to disclosed individually, or even suggest, the BMC having a total inorganic filler content in a volume ratio of 1.0 to 2.5 to the matrix resin, the applicant is directed to ANDERSON et al.

ANDERSON et al. discloses the hollow glass spheres forming 25 to 55% by volume of the bulk molding compound (column 36, lines 31-37) and the glass fiber content forming 5 to 20% by volume of the bulk-molding compound (column 38, lines 16-20). The total volume of the hollow glass spheres and the glass fibers being between 30 and 75% of the bulk molding compound, such percentages overlapping the claimed 1.0 to 2.5 proportions (i.e. 50 to 71%).

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

26. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ismael Negron whose telephone number is (571) 272-2376. The examiner can normally be reached on Monday-Friday from 9:00 A.M. to 6:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra L. O'Shea, can be reached at (571) 272-2378. The facsimile machine number for the Art Group is (571) 273-8300.

28. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

published applications maybe obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, go to http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) toll-free at 866-217-9197.

Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800

Ismael Negron
Examiner
AU 2875